

**RECEIVED
CENTRAL FAX CENTER**

AUG 23 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jaffee et al

Art Unit: 1771

Serial No. 10/718,007

Case Docket No.7237

Filed: November 20, 2003

Examiner: Torres Velazquez, Norca Liz

For: **Method of Making Tough, Flexible Mats and Tough Flexible Mats**

Commissioner of Patents and Trademarks

Washington, D. C.

Dear Sir:

DECLARATION UNDER 37 CFR 1.132

I, Alan M. Jaffee, hereby declare that:

1. I received Bachelor of Science and Master of Science degrees in Chemical Engineering from the University of Toledo in 1977 and 1985, respectively. I have worked in the chemical industry since 1976 and have been employed by Johns Manville, Inc., Waterville, OH, since 1983, working in the area of sized glass fibers and fibrous nonwoven mats. For the last twenty-three (23) years my duties at Johns Manville have included the research, development, and application of glass fibers and non-woven products made therewith. I am currently a Technical Leader in the development of new fibrous nonwoven mats.

2. I am a joint inventor of the subject matter of the above-identified application Serial No. 10/718,007. I have read the application, and the Final Office Action mailed March 14, 2006, and the Advisory Action mailed June 12, 2006. I have also read the amended claims submitted with applicants' responses dated May 16, 2006.

3. I have read each of US Patent Application No. 2003/0109190 to Geel and US Patent Nos. 5,661,213 to Arkens et al and 4,888,235 to Chenoweth et al, which were cited in the March 14, 2006 Final Office Action.

4. I disagree with the Examiner's conclusion that the invention was obvious at the time it was made from the teachings of these references for the following reasons:

a) I believe that my credentials stated above qualifies me to have more than ordinary skill in the art pertinent to the claimed invention of this application. I was familiar with the teachings on all three patents cited above in paragraph 3 above and these teachings did not make my invention obvious to me! Instead I made more than 100 trials of different types of glass fibers with and without various amounts of polymer fibers and/or different kinds of glass microfibers looking at different ratios of these combinations of fibers with different amounts of more than 7 different types of binders before I could find the claimed invention. These more than 100 trials took more than 54 days of experimentation and testing to find the claimed invention, a suitable range of compositions and mat parameters suitable for the scored and foldable mat for the vertical supports in the ceiling tile disclosed in U.S. Published Patent Application No. 20020020142.

b) The products that the mats of the claimed invention were designed for are for ceiling tiles of the type disclosed in US. Pat. App. No. 2002020142 as pointed out in the specification. In that patent application, the mats that were said to perform as the dividers, i.e. the mats that have to be scored and folded and then have the properties that will cause the ceiling tile to spring back into the proper thickness after having been compressed for storing and shipping and storing awaiting use, were mats disclosed in three patents owned by the assignee of the present invention, particularly US 5,840,413 and 5,942,288. The mats taught in those patents contained expensive glass microfibers, i.e. having diameters below 5 microns, and bound with a melamine formaldehyde binder. The mats of the present invention do not require the presence of fine glass fibers to meet the requirements for the dividers in the ceiling tile and I believe this is an unexpected result of the combinations claimed.

c) The reasons that the Geel et al reference does not lead one skilled in the art to the claimed invention is because it would lead one skilled in the art AWAY from the claimed invention. Geel et al discloses a very broad range of compositions of mats for serving as a backing for a vinyl flooring product, not mats that must have a high Taber Stiffness or having unexpected excellent flex and recovery properties after scoring and folding. Geel et al makes no suggestion that his mat has the properties needed for use in ceiling panels of the type described in U.S. Published Patent Application No. 20020020142 and the mats of the claimed invention. Nor does Geel et al teach a mat composition even near that claimed in this application. Geel et al teaches applying a first binder in amounts of 5-35 wt. percent of the fibers in the formed web and then applying a second binder in amounts of an additional 10-30 wt. percent of the of the fibrous mat, amounting to almost 15-65 wt. percent of binder. If I had followed this teaching I would never have arrived at the invention because I would be trying to make a mat containing a combination of polyvinyl alcohol or acrylic or ethylene vinyl acetate or mixtures thereof, probably a mat containing in the neighborhood of about 25 – 40 wt. percent of glass fibers and about 60-75 wt. percent of PET fibers. Even if it would have been obvious to try the type of binder taught by Arkens et al as the secondary binder, I would not have arrived at the claimed invention because the mats of the claimed invention do not contain polyvinyl alcohol or acrylic or ethylene vinyl acetate or mixtures thereof – no where does Geel et al suggest that his primary binder is not necessary.

d) The Examiner states that no weight is given to the mat properties, seemingly stating that any mat in the mats falling within the fiber and binder composition ranges taught by Geel, but modified by using binder taught by Arkens et al will inherently have the properties of the claimed mats i.e. applies the flex properties following scoring and folding, the flammability test results, the Taber Stiffness and the ratio of wet tensile to dry tensile strengths. This allegation is incorrect as demonstrated by several trials included in the more than 100 trials I ran and mentioned above. For example, the following trials produced mats having a Taber Stiffness of less than 20.

i) Trial designated 03160C, a mat containing fibers consisting of 85 percent M (15-16 micron diameter) glass fibers 1 inch long and 15 percent 1/4 inch long 1.5 denier PET fibers. The mat contained 23 wt. percent of a melamine formaldehyde binder, a binder that bonding effect at a temperature of from about 80–200 degrees C. as Geel et al teaches. The mat had a basis weight of 2.24 lbs./100 sq. ft. and a thickness of about 38.5 mils. However, the Taber Stiffness of this mat was only 32.1, substantially outside the limits of the mats of the claimed invention.

ii) Trial designated 04213a, a mat containing fibers consisting of 86.9 wt. percent 12 mm long, H117 fibers (9-10 microns diameter) and 13.1 wt. percent 6 mm long polyester (PET) fibers of 1.5 denier and 24 wt. percent of Type 82 binder, the binder described in the claimed invention. The mat had a basis weight of 1.08 lbs/100 sq. ft. and a thickness of 19.5 mils. The mat was wet laid, the binder added in an aqueous mixture and the wet mat was dried and cured at a temperature of about 121 degrees C. for 120 seconds. The Tabor Stiffness of the resultant mat was only about 18, substantially outside the level of the mats of the claimed invention.

iii) Trial designated 02122a was a mat containing fibers consisting of about 81 wt. percent 12 mm long, H117 fibers (9-10 microns diameter) and about 19 wt. percent 6 mm long polyester (PET) fibers of 1.5 denier and 24 wt. percent of Type 82 binder, the binder described in the claimed invention. The mat had a basis weight of 1.08 lbs/100 sq. ft. and a thickness of 19.5 mils. The mat was wet laid, the binder added in an aqueous mixture and the wet mat was dried and cured at a temperature of about 120 degrees C. for 120 seconds. The Taber Stiffness of the resultant mat was only about 14, substantially outside the level of the mats of the claimed invention.

e) The disclosure of Chenoweth et al adds nothing of any value because Chenoweth et al also lead one skilled in the art away from the claimed invention in the following ways:

i) The fibers taught by Chenoweth, rotary spun fibers having a diameter of 3-10 microns are a totally different type of fiber than the chopped continuous glass fibers used in the claimed invention and would not produce the properties needed for the ceiling tiles of the type disclosed in US. Pat. App. No. 2002020142 because due to the type of fiber and the small fiber diameter the Taber Stiffness required would not be achieved based on what I have learned in the more than 100 trials I have run. Further, based on my actual experience of trying to use rotary spun glass fibers of the size and type taught by Chenoweth et al to make NOWOVEN MATS, a brashy, weak mat would result that would be totally unacceptable for the ceiling tile described above.

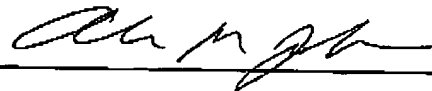
ii) The fiber ratios in Table I lead away from the claimed invention, note that the ratio of glass fibers to synthetic fibers is 33-90 : 30-50 resulting in a composition of fibers in the mat being, at the most, three times as much glass fiber as synthetic fiber. This is clearly substantially outside my claimed invention requiring at least 5-6 times as much 13-17 micron glass fiber as polymer fiber and up to about 8-9 times as much.

iii) Chenoweth teaches a different type of product, an insulating blanket having a thickness of about 1-3 inches. While the reference teaches that thicker or thinner blankets can be produced, one skilled in the art will readily recognize that Chenoweth did not teach making a nonwoven fibrous mat having a thickness of 43 +/- 5 mils, 0.038-0.048 inches, a distinctly different type of product.

f) While Arkens et al is pertinent to the binder in the claimed invention, the Arkens et al disclosure does not suggest the claimed invention and does not change the direction of the teachings of Geel et al or of Chenoweth et al.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed: _____



Alan M. Jaffee
822 Touraine Ave.
Bowling Green, OH 43402

Date: _____

8/21/06